

**IN THE CLAIMS:**

**Please amend Claim 14 as indicated hereinbelow:**

1. (Original) Anhydrous lactitol crystals belonging to the orthorhombic  $P2_12_12_1$  crystal system and having unit cell constants about  $a = 9.6 \text{ \AA}$ ,  $b = 11.1 \text{ \AA}$ ,  $c = 14.0 \text{ \AA}$ .
2. (Original) Anhydrous lactitol crystals according to Claim 1, characterized in having unit cell constants about  $a = 9.622 \text{ \AA}$ ,  $b = 11.132 \text{ \AA}$ ,  $c = 14.022 \text{ \AA}$ .
3. (Previously Amended) Anhydrous lactitol crystals according to claim 1, characterized in having a melting point of 148-152°C, a water content below 0.5% and a lactitol content of more than 99%.
4. (Previously Amended) Anhydrous lactitol crystals according to claim 1, characterized in having a low lactulitol content.
5. (Original) Anhydrous lactitol crystals according to Claim 1, characterized in having a melting enthalpy of 165-170 J/g.
6. (Original) A crystalline anhydrous lactitol product characterized in that it contains anhydrous lactitol crystals belonging to the orthorhombic  $P2_12_12_1$  crystal system and having unit cell constants about  $a = 9.6 \text{ \AA}$ ,  $b = 11.1 \text{ \AA}$ ,  $c = 14.0 \text{ \AA}$ .

7. (Original) A product according to Claim 6, characterized in that it contains a mixture of said orthorhombic anhydrous lactitol and monoclinic anhydrous lactitol.

8. (Original) A product according to Claim 6, characterized in that it contains a major portion of said orthorhombic anhydrous lactitol.

9. (Original) A product according to Claim 8, characterized in that it consists essentially of said orthorhombic anhydrous lactitol.

10. (Previously Amended) A process for preparing anhydrous lactitol crystals belonging to the orthorhombic  $P2_12_12_1$  crystal system and having unit cell constants about  $a = 9.6 \text{ \AA}$ ,  $b = 11.1 \text{ \AA}$ ,  $c = 14.0 \text{ \AA}$ , by crystallizing from an aqueous solution which contains not less than 70%, of lactitol on dry matter, characterized by bringing said aqueous lactitol solution to supersaturation in regard to lactitol, and subjecting the solution to crystallization conditions at a temperature between 70 and 150°C by boiling and/or cooling crystallization, allowing said solution to crystallize until a substantial first crystal yield is obtained, and conditioning said first crystal yield at a temperature of 70-100°C for a sufficient time to allow said first crystal yield to convert into a second crystal yield comprising said orthorhombic anhydrous lactitol crystals, recovering said orthorhombic anhydrous lactitol crystals from the mother liquor, and optionally washing and drying said crystals.

11. (Previously Amended) A process according to Claim 10, characterized in that said crystallization is performed with spontaneous nucleation or with seeding with seeds of crystalline lactitol, and that said first crystal yield comprises monoclinic anhydrous lactitol.

12. (Original) A process according to Claim 10 or 11, characterized in that said crystallization is performed by cooling said lactitol solution from a starting temperature of about 100-80°C to an end temperature of about 70-80°C and conditioning said first crystal yield at said end temperature.

13. (Previously Amended) A process according to Claim 11 characterized in that a mixture containing orthorhombic anhydrous lactitol and monoclinic anhydrous lactitol is recovered.

14. (Currently Amended) A process for preparing anhydrous lactitol crystals belonging to the orthorhombic  $P2_12_12_1$  crystal system and having unit cell constants about  $a = 9.6 \text{ \AA}$ ,  $b = 11.1 \text{ \AA}$ ,  $c = 14.0 \text{ \AA}$ , by crystallizing from an aqueous solution to which contains not less than 70% of lactitol on dry matter, characterized by bringing said aqueous lactitol solution to supersaturation in regard to lactitol, and subjecting the solution to crystallization conditions at a temperature between 70 and 150°C by boiling and/or cooling crystallization, seeding said supersaturated solution with seed crystals of orthorhombic anhydrous lactitol and separating the resulting orthorhombic anhydrous lactitol crystals from the mother liquor, and optionally washing and drying, the resulting orthorhombic anhydrous lactitol crystals being said product being anhydrous lactitol crystals belonging to the orthorhombic  $P2_12_12_1$  crystal system and having unit cell constants about  $a = 9.6 \text{ \AA}$ ,  $b = 11.1 \text{ \AA}$ ,  $c = 14.0 \text{ \AA}$ .

15. (Previously Amended) A process according to claim 14, comprising

- (a) evaporating an aqueous solution of lactitol to a concentration of 80-95% by weight and to make a supersaturated solution;
- (b) seeding the supersaturated solution at a temperature within the range 120-80°C ;
- (c) optionally evaporating further while adding lactitol solution within said temperature range to increase the crystal content;
- (d) cooling the resulting mixture;
- (e) separating the orthorhombic anhydrous lactitol crystals from the mother liquor; and
- (f) washing and drying said crystals.

16. (Original) A process according to Claim 14 or 15, wherein said crystals are provided in a crystal foot of orthorhombic anhydrous lactitol.

17. (Amended) A process for preparing anhydrous lactitol crystals belonging to the orthorhombic  $P2_12_12_1$  crystal system and having unit cell constants about  $a = 9.6 \text{ \AA}$ ,  $b = 11.1 \text{ \AA}$ ,  $c = 14.0 \text{ \AA}$ , by crystallizing from an aqueous solution which contains not less than 70%, of lactitol on dry matter, characterized by bringing said aqueous lactitol solution to supersaturation in regard to lactitol, and subjecting said solution to slow crystallization conditions at a temperature between 150 and 70°C by slow boiling and/or cooling crystallization, recovering said

orthorhombic anhydrous lactitol crystals from the mother liquor, and optionally washing and drying said crystals.

18. A process according to Claim 17, characterized by evaporating an aqueous solution of lactitol to a concentration of 85-95% by weight and seeding the supersaturated solution by adding seed crystals of monoclinic and/or orthorhombic anhydrous lactitol in a temperature range 80-100°C, and cooling the mixture slowly to an end temperature ranging from 70°C to 90°C, and recovering the resulting orthorhombic anhydrous lactitol crystals from the mother liquor.

19. (Original) A process according to Claim 18, characterized by additionally conditioning the crystal yield at said end temperature prior to recovering said crystals.

20. (Previously Amended) A process according to any one of the preceding Claim 10 or 14 or 17 characterized in that the crystallization of orthorhombic anhydrous lactitol is improved by one or more measures selected from the addition of accelerating impurities such as lactulitol to the aqueous solution of lactitol, the increase of supersaturation of said solution, the prolonging of the crystallization and/or conditioning time, and the addition of seed crystals of orthorhombic anhydrous lactitol ( $\beta$ ) to said solution.

21. (Original) A milled lactitol product made by milling crystalline anhydrous lactitol comprising crystals belonging to the orthorhombic  $P2_12_1$  crystal system and having unit cell

constants about  $a = 9.6 \text{ \AA}$ ,  $b = 11.1 \text{ \AA}$ ,  $c = 14.0 \text{ \AA}$ , characterized in that it has a mean particle size between 5 and 200  $\mu\text{m}$ .

22. (Original) A milled lactitol product according to Claim 21, characterized in that it has been obtained from anhydrous lactitol comprising orthorhombic anhydrous lactitol having a melting point of 148-152°C and a lactitol content of more than 99% and a melting enthalpy of 165-170 J/g and that it has a melting point of 145-149°C and a melting enthalpy of 160-165 J/g.

23. (Previously Cancelled)

24. (Previously Cancelled)

25. (Previously Added) The process according to Claim 11 wherein seeds of monoclinic anhydrous lactitol is utilized in said crystallization.

26. (Previously Added) An improved composition of matter containing a sugar substitute therein, said composition of matter selected from the group consisting of a foodstuff a pharmaceutical and an hygienic product, the improvement comprising the sugar substitute comprising anhydrous  $\beta$ -lactitol.

27. (Previously Added) The improved composition according to Claim 26 where the composition of matter is selected form the group consisting sweets, jams, bakery products, chocolate, juices, cream fillings, ice cream and toothpaste.

28. (Previously Added) The improved composition of matter according to Claim 26 wherein an additional sweetener is present.

29. (Previously Added) The improved composition of matter according to Claim 28 wherein the additional sweetener is saccharine, xylitol, lactitol monohydrate or anhydrous lactitol  $\alpha$ .

30. (Previously Added) A sweetener substitute comprising the lactitol of any one of claims 1, 6, 10, 14 or 17.

31. (Previously Added) The sweetener substitute according to Claim 30 wherein an additional sweetener is present.

32. (Previously Added) The sweetener substitute according to Claim 31 wherein the additional sweetener is saccharine, xylitol, lactitol monohydrate or anhydrous lactitol  $\alpha$ .

33. (Previously Added)  $\beta$ -lactitol.

34 (Previously Added) Anhydrous  $\beta$ -lactitol.

35. (Previously Added) The anhydrous lactitol crystals according to claim 3 having a melting point of 151-152°C.

36. (Previously Added) The anhydrous lactitol crystals according to claim 4 wherein the lactulitol content is less than 0.5% by weight.

37. (Previously Added) The anhydrous lactitol crystals according to Claim 36 wherein the lactulitol content is less than 0.1% by weight.

38. (Previously Added) The process according to Claim 15 wherein the seeding is effected at a temperature of 90-80°C.

39. (Previously Added) The process according to Claim 15 wherein in step (d) the mixture is cooled to a temperature of 70-100°C.

40. (Previously Added) The process according to Claim 39 wherein in step (d) the mixture is cooled to a temperature of 70-80°C.

**Please add Claims 41-52 as follows:**

--41. (New) A sweetener substitute comprising  $\beta$ -lactitol.

42. (New) A sweetener substitute comprising anhydrous  $\beta$ -lactitol.

43. (New) The  $\beta$ -lactitol according to Claim 33 having a small amount of lactulitol associated therewith, said lactitol being present in less than 0.5% by weight.

44. (New) The  $\beta$  lactitol according to Claim 43 wherein the amount of the lactulitol is less than 0.1% by weight.

45. (New) The anhydrous  $\beta$ -lactitol according to Claim 34 having a small amount of lactulitol associated therewith, said lactulitol being present in less than 0.5% by weight.

46. (New) The anhydrous  $\beta$ -lactitol according to Claim 45 wherein the amount of the lactulitol is less than 0.1% by weight.

47. (New) Crystalline  $\beta$ -lactitol.

48. (New) Anhydrous crystalline  $\beta$ -lactitol.

49. (New) Substantially pure  $\beta$ -lactitol.

50. (New) Substantially pure anhydrous  $\beta$ -lactitol.

51. (New) The  $\beta$ -lactitol according to Claim 33 wherein the water content is less than 0.5% by weight.

52. (New) The substantially pure  $\beta$ -lactitol according to Claim 49 wherein the water content is less than 0.5% by weight. - -